

## CONTROLLED INDUCTANCE DEVICE AND METHOD

### Abstract of the Disclosure

5           Improved inductive apparatus having controlled core saturation which provides a desired inductance characteristic with low cost of manufacturing. In one embodiment, a pot core having a variable geometry gap is provided. The variable geometry gap allows for a “stepped” inductance profile with high inductance at low dc currents, and a lower inductance at higher dc currents, corresponding for example to the on-hook and off-hook states of a Caller ID function in a typical  
10   telecommunications line. In other embodiments, single- and multi-spool drum core devices are disclosed which use a controlled saturation element to allow for selectively controlled saturation of the core. Exemplary signal conditioning circuits (e.g., dynamically controlled low-capacitance DSL filters) using the aforementioned inductive devices are disclosed, as well as cost-efficient methods of manufacturing the inductive devices. An improved gapped toroid and an associated  
15   method of manufacturing is also disclosed.

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